

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 – 10. (canceled).

11. (currently amended): A Mmethod for cooling a moving metal strip, of the type in which:

~~the metal strip to be cooled is moved in a continuous manner, the method comprising:~~
moving the metal strip in a continuous manner;

providing- the metal strip ~~is pressed-~~ onto a main cooling roller which can be moved about the axis thereof ~~such~~ so that the metal strip forms an arc around a portion of an ~~whose inner face~~ ~~delimits with the~~ outer face of the main cooling roller to form a contact zone which is suitable for discharging part of the heat of the metal strip towards ~~an~~ the inner side of ~~this~~ the main cooling roller, and

~~-pressing the strip is held in~~ against ~~contact with the main cooling roller by means of at~~
least one support roller on ~~an~~ the outer face of the arc formed by the metal strip, ~~the or each~~
support roller being arranged substantially parallel with the main cooling roller and so as to be movable in terms of rotation about the axis thereof,

wherein the ~~at least one or each~~ support roller comprises, at least at a periphery thereof, is
~~constituted, at least at the periphery, by a material which is resiliently deformable so that a~~
module of elasticity of the material is lower than a modulus of elasticity of the metal strip, and

which is thermo-capacitive so that the material is able to store, at a core thereof, a part of the thermal energy from the metal strip-material, and

wherein the heat transmitted from the metal strip to the at least one or each support roller is discharged by a secondary cooling unit means which are suitable for which forming, with a portion of an the outer face of the at least one or each support roller, a zone for transferring heat towards the these secondary cooling unit from the supporting roller means.

12. (currently amended): The Mmethod according to claim 11, wherein the at least one or each support roller extends at least over an the entire width of the metal strip so as to apply to the outer face of the arc formed by the strip a pressure which is substantially homogeneous over the this entire width.

13. (currently amended): The Mmethod according to claim 11, wherein the temperature of the metal strip pressed at an the inlet of the main cooling roller is lower than at the degradation temperature of the material which constitutes the at least one support roller(s).

14. (currently amended): A method for cooling a moving metal strip, the method comprising:

moving the metal strip in a continuous manner;

providing the metal strip onto a main cooling roller which can be moved about the axis thereof such that the metal strip forms an arc around a portion of an outer face of the main cooling roller to form a contact zone which is suitable for discharging part of the heat of the metal strip towards an inner side of the main cooling roller, and

pressing the strip against the main cooling roller by at least one support roller on an outer face of the arc formed by the metal strip, the support roller being arranged substantially parallel with the main cooling roller and so as to be movable in terms of rotation about the axis thereof,

wherein the at least one support roller comprises a material which is resiliently deformable and thermo-capacitive, and wherein the heat transmitted from the metal strip to the at least one support roller is discharged by a secondary cooling unit which forms, with a portion of an outer face of the at least one support roller, a zone for transferring heat towards the secondary cooling unit from the supporting roller.

Method according to claim 13 wherein the temperature of the metal strip pressed at an inlet of the main cooling roller is lower than a degradation temperature of the material which constitutes the at least one support roller, and

wherein the temperature of the metal strip pressed at the inlet is lower than approximately 200°C.

15. (currently amended): An Assembly for cooling a moving metal strip, the strip to be cooled being moved in a continuous manner, of the type assembly comprising:

a main cooling roller, onto which the metal strip is provided~~pressed~~ such that the metal strip so as to form~~forms~~ an arc around a portion of whose inner face delimits, with the an outer face of ~~the~~this main cooling roller to form, a contact zone which is suitable for discharging ~~part of the heat from~~ of the strip towards an the inner side of the main cooling roller; and

at least one support roller contacting~~on~~ the outer face of the arc formed by the metal strip, ~~which roller is suitable for holding the strip in contact with the main cooling roller, the at least one~~ each support roller being arranged substantially parallel with the main cooling roller ~~and~~

~~so as to be movable in terms of rotation about the axis thereof, wherein the at least one or each support roller is constituted, at least at the periphery, by comprises, at least at the periphery thereof, a material which is resiliently deformable so that a modulus of elasticity of the material is lower than a modulus of elasticity of the metal strip, and which is thermo-capacitive so that the material is able to store, at a core thereof, a part of the thermal energy from the metal strip material, and wherein the assembly comprises; and~~

~~a secondary cooling unit means which forms are suitable for forming, with a portion of the outer face of the at least one or each support roller, a zone for transferring heat towards the these secondary cooling unit from the at least one means in order to discharge the heat transmitted from the strip to the or each support roller.~~

16. (currently amended): An assembly for cooling a moving metal strip, the assembly comprising:

a main cooling roller onto which the metal strip is provided such that the metal strip forms an arc around a portion of an outer face of the main cooling roller to form a contact zone which is suitable for discharging heat from the strip towards an inner side of the main cooling roller;

at least one support roller contacting the outer face of the arc formed by the metal strip, the at least one support roller being arranged substantially parallel with the main cooling roller, wherein the at least one support roller comprises a material which is resiliently deformable and thermo-capacitive; and

a secondary cooling roller which forms, with a portion of the outer face of the at least one support roller, a zone for transferring heat towards the secondary cooling roller from the at least one support roller~~Assembly according to claim 15,~~

wherein the at least one~~or each~~ support roller is produced, at least at the periphery, from elastomer material, in particular from vulcanised silicone.

17. (currently amended): An assembly for cooling a moving metal strip, the assembly comprising:

a main cooling roller onto which the metal strip is provided such that the metal strip forms an arc around a portion of an outer face of the main cooling roller to form a contact zone which is suitable for discharging heat from the strip towards an inner side of the main cooling roller;

at least one support roller contacting the outer face of the arc formed by the metal strip, the at least one support roller being arranged substantially parallel with the main cooling roller, wherein the at least one support roller comprises a material which is resiliently deformable and thermo-capacitive; and

a secondary cooling roller which forms, with a portion of the outer face of the at least one support roller, a zone for transferring heat towards the secondary cooling roller from the at least one support roller~~Assembly according to claim 15,~~

wherein the material from which at least the periphery of the at least one~~or each~~ support roller is constituted has a thermal conductivity coefficient of less than 1 W/m.K.

18. (currently amended): The Assembly according to claim 15, wherein ~~the~~ diameter of the ~~at least one or each~~ support roller is between approximately a quarter and a tenth of ~~the~~ diameter of the main cooling roller.

19. (currently amended): The Assembly according to claim 15, wherein the secondary cooling ~~unit means~~ comprises at least one secondary cooling roller which is movable in terms of rotation about the axis thereof and which is arranged substantially parallel with the at least one support roller(s).

20. (currently amended): The Assembly according to claim 15, wherein the assembly further comprises a system which supplies~~means for being supplied with~~ a heat-exchanging fluid, ~~which means are common~~ to the main cooling roller and to the secondary cooling unit means.